

AB112. SOH23ABS_017. A systematic review and meta-analysis assessing the use of blunt suture needles versus sharp suture needles in risk of transmission of bloodborne infectious diseases

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Background: Surgeons are routinely exposed to bloodborne infectious diseases, with suture needles accounting for 18.5% of needlestick injuries, second only to syringe needles. Blunt suture needles have been proposed to reduce the risk of needlestick injuries; however, their uptake has been limited. The aim of this review was to perform a systematic review and meta-analysis of randomised controlled trials (RCTs) assessing whether blunt suture needles reduce the risk of percutaneous injury and bloodborne infectious disease transmission.

Methods: A systematic review and meta-analysis was performed per PRISMA guidelines. PubMed, Cochrane and EMBASE databases were searched for RCTs. Dichotomous variables were pooled as risk ratios (RR) and associated 95% confidence intervals (CI) using the Mantel-Haenszel method. Random or fixed effects modelling use was based on statistical heterogeneity (I^2).

Results: A total of 14 RCTs were identified with 2,488 patients. RCTs in laparotomies, caesarean sections, episiotomies and orthopaedic surgeries were included. Blunt needles when compared with sharp needles resulted in a significant reduction in glove perforation (RR =0.27, 95% CI: 0.15–0.47). Blunt needles also resulted in a significant reduction in needlestick injuries (RR =0.48, 95% CI: 0.23–0.97) and contamination of surgeon's hand (RR =0.18, 95%

CI: 0.10–0.32). However, surgeon's handling satisfaction decreased with blunt needles compared with sharp needles (RR =1.25, 95% CI: 1.10–1.42).

Conclusions: Blunt suture needles are safer than sharp suture needles for surgeons and therefore reduce the risk of transmission of bloodborne infectious diseases. This, however, comes at the cost of decreased ease of use. The authors recommend the routine use of blunt suture needles for fascial closure.

Keywords: Blunt suture needles; sharp suture needles; needlestick injury; bloodborne infectious disease; safety in surgery

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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